



Cascade Earth Sciences, Ltd.

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February 9, 1993

(b) (6)

President

Colbert Landfill Contaminate Committee

(b) (6)

Colbert, WA 99005

RE: Public Information Night held February 3, 1993

Dear (b) (6)

A public meeting was held Wednesday, February 3, 1993 at the Colbert Elementary School. The purpose of the meeting was threefold:

1. To introduce Cascade Earth Sciences as the technical assistant to the CLCAC.
2. Explain the findings of a cursory review of the Phase I Landau & Associates reports.
3. Determine local citizens questions and concerns regarding the remedial activities in and around the Colbert Landfill.

The meeting was attended by approximately 16-20 local citizens in addition to:

(b) (6)

(CLCAC)

Neal Thompson (EPA)

(b) (6)

(CLCAC)

Steve Holderby (Spokane County Health District)

Dean Fowler (Spokane County Utilities) Chris Hempleman (Dept. of Ecology)

(b) (6) reviewed a brief history of the CLCAC grant and the hiring of Cascade Earth Sciences as technical assistant. I followed with a presentation detailing the qualifications of Cascade Earth Sciences. Subsequent material covered explanations of air stripping technology and groundwater hydrology and investigation. In general, much work has been done at the Colbert Landfill site and the work we reviewed appeared to be done well. Several questions did surface in our review concerning water table drawdown and supplemental water treatment options among other issues. Further review will hopefully answer our questions. We will present to the CLCAC a list of unanswered questions in our detailed review reports.

Attached is a list of citizens' questions and concerns presented at the meeting. We will incorporate them into our review as much as possible.

USEPA SF



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Other Offices In:

Portland Area
(503) 695-5760

Albany, OR
(503) 926-7737

La Grande, OR
(503) 963-7758

Medford, OR
(503) 779-2280

Pocatello, ID
(208) 234-2123

(b) (6)

February 9, 1993

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The next public meeting is to be held near the end of April. We will work with you to set a date as that time approaches. I've also attached copies of the overheads prepared for the February 3rd meeting for your information. If any citizen's questions or concerns come to light, please forward them to me as soon as possible.

Very truly yours,

CASCADE EARTH SCIENCES, LTD.



Daniel J. Burgard
Soil Scientist

Attachments

cc: (b) (6), CLCAC
Bart Barlow, CES LaGrande
Les Tipton, CES LaGrande
John Jenkins, CES Corbett
Toby Scott, CES Albany
Grechen Schmidt

Public Information Night, February 3, 1993
Colbert Landfill Contaminate Area Committee
Citizens Questions and Concerns

- Air quality concern - what will this due to air quality.
- When will this (cleanup) be done?
- What were the results of pilot air stripping project?
- Wells - how do you keep from contaminating lower aquifers when drilling?
- What effect does VOC's in air have on weather, landscape, environment?
- Methylene Chloride doesn't strip well, how will MC that is still in the water effect the Little Spokane River?
- Location of extraction wells and why.
- What is the percentage of contaminant left in the landfill and how much is going to keep seeping into the groundwater?
- Air stripping - is it the best way?
- Air quality review - how close to state standards, safety margin? What does the modeling show?
- Independent review is important to everyone.
- Source control. How will contaminants still in the landfill be kept out of the water?
- 8 holes (wells newly placed) on section 14 to the south. Why?
- Actual amount of contaminant placed in landfill.
- Why have they increased performance criteria on MC? What will this do?
- Private wells - why can't existing domestic wells be used for study or pilot extraction tests?

DETAILED AGENDA

INTRODUCTION

CASCADE EARTH SCIENCES, LTD.

Background - overhead

Scope of Services - overhead

Assigned Task

Hired by Colbert Landfill Contaminate Area Committee

Provide Technical Assistance (overhead)

Translation/explanation

Second opinion/critique

OBJECTIVES

1. Briefly describe site background
2. Brief overview of initial cursory review of remedial action and design

General impression

Site hydrology in important

- complex site

- questions

Brief discussion of air stripping

System engineering overview

- general impression

- questions

3. Identify questions and public concerns to address during review process.

DISCUSSION

Air stripping remediation requires knowledge of site conditions, good design.

AIR STRIPPING

- How does it work
- Air Quality concerns
- How does it get designed
 - pilot study

Hydrogeology and site investigation

- Overall impression

Groundwater

Lots of investigation - very complex site - geology and hydrology

Pump tests were appropriate

Procedures all straight forward

- importance to pump and treat on any remediation

- DNAPLS

- Complex site

Three aquifers identified with two directions of flow

Contaminates not considered DNAPL's (dense non-aqueous phase liquids)

Contaminants have spread since the remedial investigation

- Questions (selected)

1. Has the drilling program been sufficient to give enough knowledge of this obviously complex site?
2. Have the aquifers been adequately characterized to assess the migration of contaminants?
3. To what degree will the removal of groundwater from the three significant aquifers affect surrounding water wells which are still in use? We were unclear as to which water wells have been taken out of service and which were still being used. The anticipated drawdown may have an impact on area water wells.
4. How effective will the pump and treat method be at cleaning up the groundwater and what supplemental means of treatment are being considered?

Design and Engineering (Pilot Study)

- Overall Impression

No glaring omissions in treat system, discharge system, pilot study.

Qualified personnel inspected the system - satisfactory results.

Weather station will be important for air quality monitoring.

Thorough analysis of treatability resulted in important adjustments to design.

- Questions

Future review and translation

DEAN FOWLER, GRETCHEN, CHRIS

Questions and concerns

-Open discussion with meeting participants.

AGENDA

INTRODUCTION

CASCADE EARTH SCIENCES, LTD.

Dan Burgard

ASSIGNED TASKS

OBJECTIVES

1. Briefly describe site background
2. Brief overview of initial cursory review of remedial action and design
3. Identify questions and public concerns to address during review process.

DISCUSSION

AIR STRIPPING

HYDROGEOLOGY AND SITE INVESTIGATION

DESIGN AND ENGINEERING (PILOT STUDY)

FUTURE REVIEW AND TRANSLATION

COMMENTS

DEAN FOWLER, SPOKANE COUNTY
GRETCHEN SCHULTZ, EPA
CHRIS HEMPLEMAN, WDOE

QUESTIONS AND CONCERNS

-Open discussion with meeting participants.



Cascade Earth Sciences, Ltd.

CASCADE EARTH SCIENCES, LTD.

- Founded 1976
- Goal: Provide comprehensive, practical and cost effective solutions for environmental management.
- Professional staff: Engineers, Geologists, Hydrologists, Soil Scientists
- Comprehensive Environmental Management Services
 - Site investigation and monitoring
 - Municipal and industrial waste management
 - Beneficial uses of wastes and wastewaters
 - Hazardous waste management, investigation, remediation
 - Land use and water quality management
- Experienced in explaining technical problems to non-technical people
- Six Pacific Northwest offices:
 - Spokane, Washington
 - LaGrande, Oregon
 - Pocatello, Idaho
 - Portland, Oregon
 - Albany, Oregon
 - Medford, Oregon



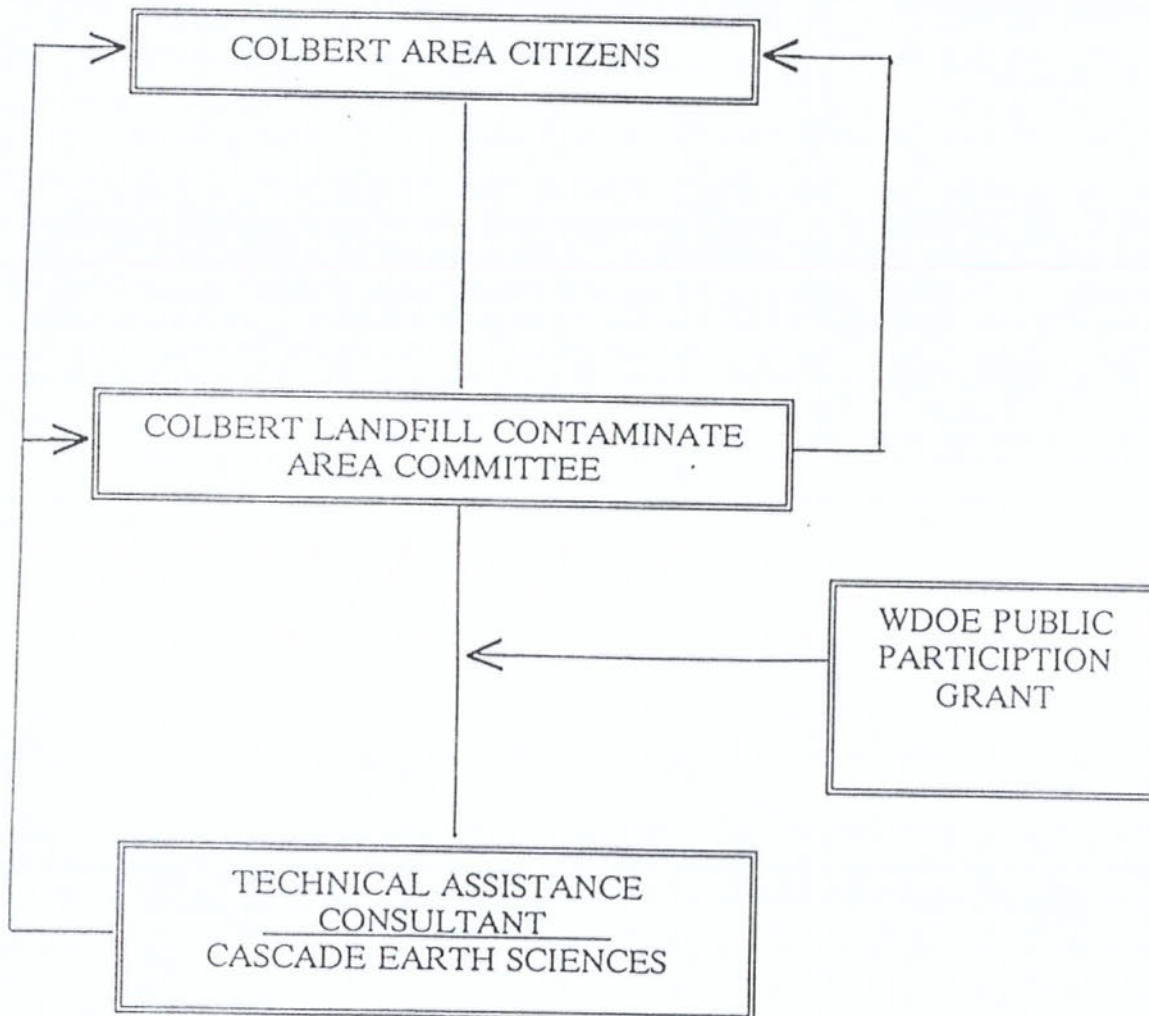
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TECHNICAL ASSISTANCE TASKS
FOR
COLBERT LANDFILL CONTAMINATE
AREA COMMITTEE

- Education and explanations to CLCAC and general public.
- Critique of Spokane County consultant's work.
- Comment on technical opinions and conclusions especially the effectiveness of reclamation and its impact on local residents.
- Critique of project direction.



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TECHNICAL ASSISTANCE ORGANIZATIONAL CHART



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COLBERT LANDFILL SITE HISTORY

WORK TO DATE:

- 1968 Colbert Landfill begins operations
- 1980 Domestic well sampling program begins after citizen complaints
- 1981-86 Groundwater studies and hydrogeologic investigation
 Contaminants found:
 Dichloroethylene (DCE)
 Trichloroethylene (TCE)
 Tetrachloroethylene (PCE)
 Methylene Chloride (MC)
 Trichloroethane (TCA)
- 1983
(August) Designated EPA Superfund Site (National Priorities List).
- 1984 Bottled water distributed.
- 1984-85 Whitworth water district remedial water system built.
- 1985 Colbert Landfill Contaminate Area Committee (CLCAC) formed.
- 1986 Colbert Landfill closed.
- 1987 Remedial Investigation and Feasibility Study completed.
- 1991 EPA Record of Decision specified for groundwater pump and treat
 remediation.
- 1991 Final Phase I Engineering report completed.
(December)
- 1992 Final extraction well plan prepared.
(August)
- 1992 Public Participation Grant awarded to CLCAC to hire technical
 consultant.
- 1992 Cascade Earth Sciences, Ltd, Spokane, WA hired by CLCAC to
(December) provide technical assistance.



DEFINITIONS

WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY © 1990

HY•DROL•O•GY (*n*) (1762): A science dealing with the properties, distribution, and circulation of water on and below the earth's surface and in the atmosphere.

GEO•HY•DROL•O•GY (*n*) (1909): A sciences that deals with the character, source and mode of occurrence of underground water.

A•QUI•FER (*n*) (1901): A water bearing stratum of permeable rock, sand or gravel.

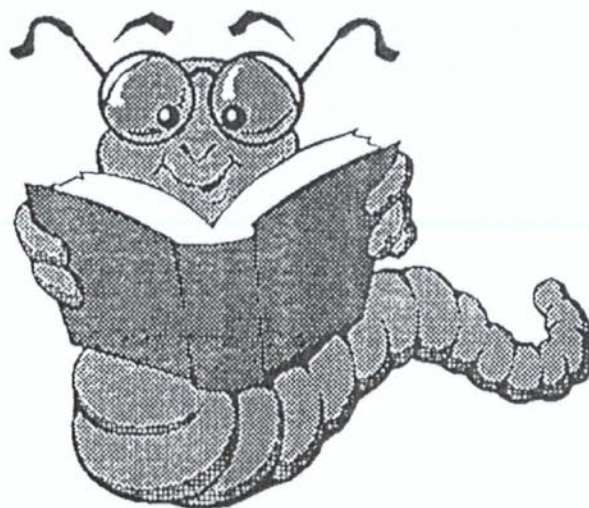
PER•ME•ABLE (*adj*): Capable of being permeated; penetrable; esp: having pores or openings that permit liquids or gasses to pass through.

RE•ME•DI•A•TION (*n*) (1818): The act or process of remedying.

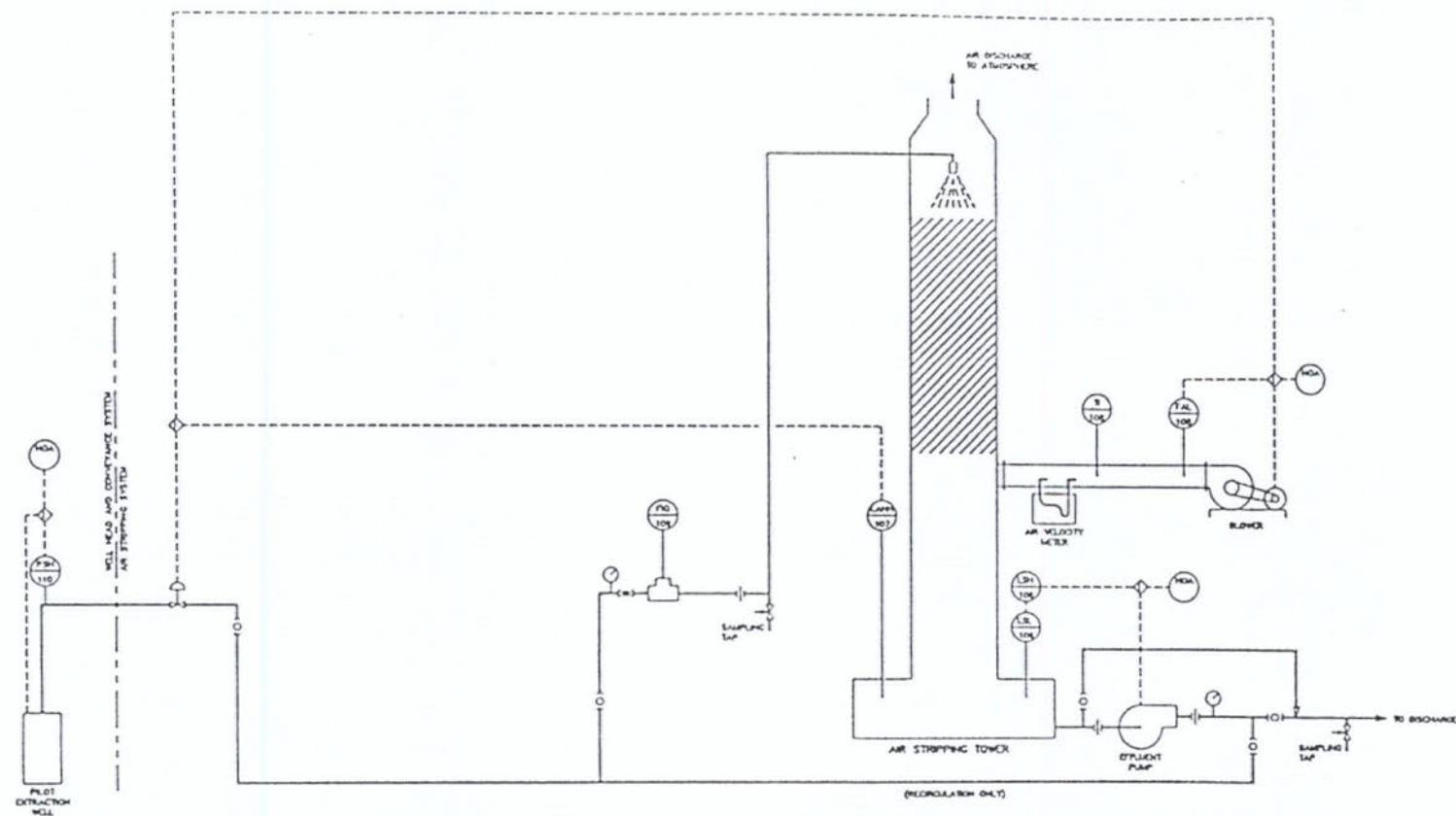
NOT FOUND IN WEBSTERS

AIR STRIPPING: A method of removing volatile organic compounds (VOC's) from water by evaporation.

HYDROGEOLOGY: Common term for geohydrology.



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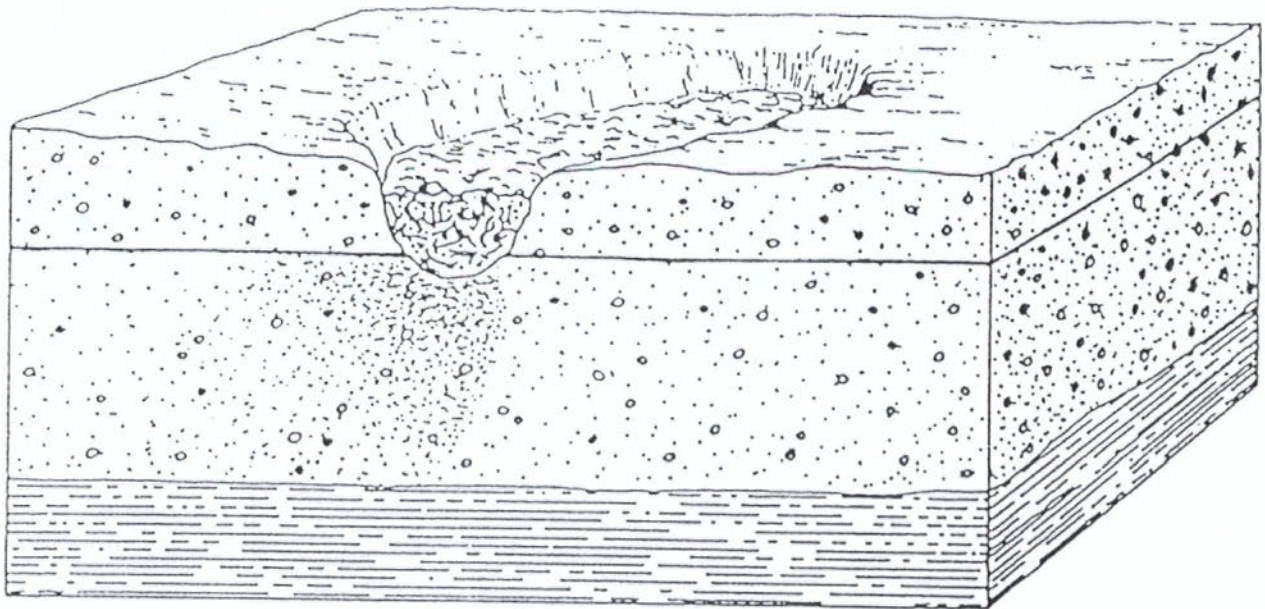
- KEY TO SYMBOLS
- AC ANALYSIS ELEMENT
 - AC ANALYSIS INDICATOR/CONTROLLER
 - MOA MAN/OFF/AUTOMATIC SWITCH
 - LSH LEVEL SWITCH HIGH
 - LPH LEVEL ALARM HIGH HIGH
 - FAL FLOW ALARM LOW
 - LSL LEVEL SWITCH LOW
 - FI FLOW INDICATOR/CONTROLLER
 - FIQ FLOW INDICATOR QUANTIFIER
 - T TEMPORAL INDICATOR
 - PSH PRESSURE SWITCH HIGH
 - PG PRESSURE GAUGE
 - PM FLOW METER
 - MV MAN VALVE
 - BS BALL VALVE
 - IOV ISOLATION VALVE
 - GV GLOBE VALVE
 - INT INTERLOCK
 - CV CONTROL VALVE

Spokane County Colbert Landfill Phase I Treatment & Discharge Plan Colbert, WA	Figure TD-2.3
Basic System Flow and Control Configuration	
M.E. Metcalf & Eddy	Date July 1990

HEALTH EFFECTS OF CONSTITUENTS OF CONCERN IN GROUNDWATER, COLBERT LANDFILL SITE

<u>Constituent of Concern*</u>	<u>Target Organs</u>	<u>Symptoms</u>	<u>Carcinogen?</u>
Methylene Chloride (MC)	skin, cardiovascular, eyes, central nervous system	fatigue, weakness, sleepiness, light headed, numbness, tingliness, nausea	yes
Dichloroethylene (DCE)	respiratory, eyes, central nervous system	depression, irritated eyes and respiratory system	no
Dichloroethane (DCA)	skin, liver, kidney	depression, skin irritant, liver and kidney damage	no
Trichloroethylene (TCE)	respiratory, heart, liver, kidney, central nervous system, skin	vomiting, vertigo, tremors, nausea, cardiac arrhythmia	yes
Trichloroethane (TCA)	central nervous system, nose, eyes, liver, kidneys	irritation of tissues, depression	yes
Tetrachloroethylene (PCE)	liver, kidneys, eyes, upper respiratory, central nervous system	nausea, flush face and neck, vertigo dizziness	yes

* All are solvents used for several purposes in manufacturing including cleaning and degreasing. Trichloroethane has been sold as a household spot remover and the solvent in contact cement.



- (A) A permeable layer of sand and gravel overlying an impermeable shale creates a potential pollution problem, because the contaminants are free to move with ground water.

